IN THE CLAIMS

Please amend the claims of this application as indicated in the following listing of claims, which replaces all previous listings of claims.

1. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in the exoI motif and an amino acid mutation at V93 of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from one of the other sequences of SEQ ID NOs. 83-108, wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

2. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in the exoII motif and an amino acid mutation at V93 of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from one of the other sequences of SEQ ID NOs. 83-108, wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

3. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in the exo III motif and an amino acid mutation at V93 of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from one of the other sequences of SEQ ID NOs. 83-108, wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

4. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in each of the exo I and exo III motifs and an amino acid mutation at V93 of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from one of the other sequences of SEQ ID NOs. 83-108, wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

5. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in each of the exo II and exo III motifs and an amino acid mutation at V93 of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from one of the other sequences of SEQ ID NOs. 83-108, wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

6. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in each of the exo I and exoII motifs and an amino acid mutation at V93 of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from one of the other sequences of SEQ ID NOs. 83-108, wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

7. (Currently Amended) An Archaeal DNA polymerase comprising at least one amino acid mutation in each of the exoI, exo II, and exoIII motifs and an amino acid mutation at V93[[,]] of SEQ ID NO:89 or a corresponding residue in an amino acid sequence selected from

one of the other sequences of SEQ ID NOs. 83-108,wherein said Archaeal DNA polymerase is deficient in 3'-5' exonuclease activity.

8. (Original) The mutant Archaeal DNA polymerase of any of claims 1-7, wherein said mutant Archaeal DNA polymerase is selected from the group consisting of: KOD, Pfu, and JDF-3 DNA polymerase.

9. (Original) The mutant Archaeal DNA polymerase of any of claims 1-7, wherein said mutation at position V93, is a Valine to Arginine substitution, a Valine to Glutamic acid substitution, a Valine to Lysine substitution, a Valine to Aspartic acid substitution, a Valine to Glutamine substitution, or a Valine to Asparagine substitution.

10. (Original) The mutant Archaeal DNA polymerase of any of claims 1-7, wherein said mutation in exo I motif is selected from the group consisting of: aspartic acid (D) to threonine (T), aspartic acid (D) to alanine (A) and glutamic acid (E) to alanine (A).

11. (Withdrawn) An isolated polynucleotide comprising a nucleotide sequence encoding a mutant Archaeal DNA polymerase of any of claims 1-7.

12. (Original) A composition comprising a mutant Archaeal DNA polymerase of any of claims 1-7.

13. (Original) The composition of claim 12, further comprising an enzyme with reverse transcriptase activity.

14. (Original) The composition of claim 13, wherein said enzyme with reverse transcriptase is a second mutant DNA polymerase.

15. (Original) The composition of claim 13, wherein said enzyme with reverse transcriptase is the mutant Archaeal DNA polymerase which contains an increased reverse transcriptase activity.

16. (Original) The composition of claim 12, further comprising a PCR additive.

17. (Original) A kit comprising a mutant Archaeal DNA polymerase of any of claims 1-7 and packaging material therefor.

18. (Original) The kit of claim 17, further comprising an enzyme with reverse transcriptase activity.

19. (Original) The kit of claim 18, wherein said enzyme with reverse transcriptase is a second mutant DNA polymerase.

20. (Original) The kit of claim 18, wherein said enzyme with reverse transcriptase is the mutant Archaeal DNA polymerase which contains an increased reverse transcriptase activity.

21. (Original) The kit of claim 17, further comprising a PCR additive.

22. (Withdrawn) A method for DNA synthesis comprising:

(a) providing a mutant Archaeal DNA polymerase of any of claims 1-7; and

(b) contacting said mutant Archaeal DNA polymerase with a polynucleotide template to permit DNA synthesis.

23. (Withdrawn) A method for determining the abundance of a polynucleotide template, comprising

(a) providing a mutant Archaeal DNA polymerase of any of claims 1-7;

(b) contacting said mutant Archaeal DNA polymerase with said polynucleotide template to produce amplified product; and

(c) determining the abundance of said amplified product, wherein said abundance of said amplified product is indicative of the abundance of said polynucleotide template.

24. (Withdrawn) The method of claim 23, wherein said polynucleotide template is a RNA molecule, and wherein said RNA molecule is reverse transcribed into cDNA before the contacting step (b).

25. (Withdrawn) The method of claim 24, wherein said RNA is reverse transcribed by an enzyme with reverse transcriptase activity.

26. (Withdrawn) The method of claim 25, wherein said RNA is reverse transcribed by said mutant Archaeal DNA polymerase which also contains an increased reverse transcriptase activity.